



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,958	09/09/2003	Akihiro Ouchi	CFA 00006 US	3512

7590 05/04/2006

Canon U.S.A. Inc.
Intellectual Property Department
15975 Alton Parkway
Irvine, CA 92618-3731

EXAMINER

SHERMAN, STEPHEN G

ART UNIT	PAPER NUMBER
----------	--------------

2629

DATE MAILED: 05/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/658,958	Applicant(s) OUCHI ET AL.	
	Examiner Stephen G. Sherman	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 April 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings filed on the 10 April 2006 are objected to because the PRIOR ART label is hand written and should be typed. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1, 3-9 and 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furuhashi et al. (US 6,583,771) in view of Ogino et al. (US 6,593,902).

Regarding claims 1 and 16, Furuhashi et al. disclose an image display device having a display unit (Figure 1, item 101-1 and item 102-1) and a display control apparatus for controlling an image display device (Figure 1, item 101-1) having a display unit (Figure 1, item 102-1), comprising:

input/output means for transferring image data input from the image display device disposed at an upstream location to an image display device disposed at a downstream location (Figure 1, item 104 and column 5, lines 9-14. The examiner interprets that since the input data processor 104 receives image information from the display data bus 103, and then transfers the image input data to the next image display device 101-2 located downstream, that this would be an input means for transferring data between the two image display devices and output means for transferring the data to the next display device.);

acquisition means for acquiring resolution information associated with the image display device (Figure 1, item 131, column 5, lines 57-65 and column 7, lines 1-9. The examiner interprets that since the microcomputer 128 receives a command and loads data into the registers that it is acquiring resolution information from the control data processing unit 131 which receives control data from an external computer system.);
and

generation means for generating resolution information on the basis of the resolution information acquired by the acquisition means and a resolution of the display unit (Figure 1, item 112. The examiner interprets that since the enlarged data processor accepts information from the frame memory controller and the enlargement rate registers that it is generating resolution information based on the data which is received by the acquisition means and a resolution of the display unit since it takes into account the enlargement rates.);

Furuhashi et al. fail to teach of an image display device having a display unit, comprising:

acquisition means for acquiring resolution information associated with the image display device disposed at the downstream location;

and first storage means for storing the generated resolution information for supply to the image display device disposed at the upstream location.

Ogino et al. disclose an image display device having a display unit, comprising:

acquisition means for acquiring resolution information associated with an image display device disposed at the downstream location (Column 7, lines 41-54 explain that each of the display units can acquire the size of the screen, i.e. resolution and the position of each of the units, meaning a display device located at a downstream location, meaning that each display device has an “acquiring” means.);

and first storage means for storing resolution information for supply to image display device disposed at the upstream location (Column 8, lines 34-46 and 52-65 explain that the address information is found by dividing the screen area until only one unit is left, i.e. one pixel, and that this address information is set according to the rows of bits, i.e. resolution information, and that this is stored inside of the memory 104 of each of the displays. Then, as explained above, since any display can acquire the size and position of any other display device this information could be supplied to a display device located at an upstream location.).

Therefore it would have been obvious to “one of ordinary skill” in the art to use the input/output control method of acquiring information between adjacent display

devices as taught by Ogino et al. with the multidisplay control system taught by Furuhashi et al. in order to provide an extending type of display device in which a size of the screen can freely and easily be changed by a user and resolution can also be increased or decreased according to the size of the screen.

Regarding claim 3, Furuhashi et al. and Ogino et al. disclose an image display device according to claim 1.

Furuhashi et al. also disclose an image display device further comprising direction detection means for detecting whether image display devices connected at downstream locations are arranged in a vertical or horizontal direction (Figures 5 and 6 and column 8, line 47 to column 9, line 32. The examiner interprets since identification numbers are given to the display devices based on their locations in the multidisplay system that it is detected whether the image display device is located in a horizontal or vertical direction with respect to the first image display device connected to the controller.),

wherein the generation means generates the resolution information by cumulatively adding the resolution of the display unit with the resolution information acquired by the acquisition means in the direction determined by the direction detection means (Figures 5 and 6 and column 9, lines 14-32. The examiner interprets that since the display units located at directions determined by the direction detection means are identified by ID numbers and then the sum of a number of lines corresponding to a range from the

leading edge of the vertical synchronizing signal, that this is adding the resolution cumulatively in the direction detected.).

Regarding claim 4, Furuhashi et al. and Ogino et al. disclose an image display device according to claim 1.

Furuhashi et al. also disclose an image display device further comprising detection means for detecting a location of a present image display device in the multidisplay system (Figure 1, item 129 and Figures 5 and 6 and column 8, line 47 to column 9, line 32. The examiner interprets since identification numbers are given to the display devices based on their locations in the multidisplay system that the location of a present image display device is detected.);

determination means for determining which part of the image data should be displayed by the present display unit on the basis of the location detected by the detection means (Figure 1, item 129 and Figures 5 and 6 and column 8, line 47 to column 9, line 32. The examiner interprets since identification numbers are given to the display devices based on their locations in the multidisplay system that this determines which part of the image data should be displayed by the present display unit.); and display control means for displaying the part of the image data (Figure 1, item 131.).

Regarding claim 5, Furuhashi et al. and Ogino et al. disclose an image display device according to claim 4.

Furuhashi et al. also disclose an image display device

wherein the display control means determines the display scaling factor on the basis of the number of pixels of the part of the image data to be displayed and on the basis of the resolution of the display unit (Figure 1, items 112, 120 and 121 and column 9, lines 33-54. The examiner interprets that the enlargement rate numerator and the enlargement rate denominator are determined based on the resolution of the image devices, which sets the display scaling factor.),

converts the resolution of the part of the image data in accordance with the determined display scaling factor (Figure 1, item 112), and displays the part of the image data on the display unit (Figure 1, items 116 and 102-1 and column 9, lines 33-54).

Regarding claim 6, Furuhashi et al. and Ogino et al. disclose an image display device according to claim 4.

Furuhashi et al. disclose an image display device wherein the detection means comprises

second storage means for acquiring chain connection information indicating the manner in which further image display devices are chain-connected at downstream locations of the image display device (Figure 1, item 129 and column 5, lines 58 to column 6, line 3. The examiner interprets that the ID setting circuit 129 is a storage means for acquiring chain connection information since it is connected to the control data processing circuit 131, which is connected to the control data processing circuits of the downstream devices 101-2 through 101-n and that the ID number must be set in

accordance with the number of display devices connected to each other, therefore the ID setting circuit must acquire information according to how the rest of the display devices are connected.),

generating chain connection information associated with the present image display device on the basis of the acquired chain connection information (Figure 1 and column 5, line 58 to column 6, line 3. The examiner interprets that the ID setting circuit not only acts as a storing means for the chain information but also generates chain information since the ID number must be set based on the ID numbers of the other connected display devices.),

storing the generated chain connection information such that an image display device at an upstream location can acquire the chain connection information (Figure 1 and column 5, line 58 to column 6, line 3. The examiner interprets that the ID number is stored in the ID setting circuit which is connected to the control data processing circuit which communicates between display devices, i.e. a display device at an upstream location.); and

third storage means for acquiring the total number of image display devices connected at downstream locations from the adjacent image display device at the downstream location and storing the total number of image display devices such that the image display device at the upstream location can acquire it (Figure 1, item 130 and column 5, line 58 to column 6, line 3. The examiner interprets that the total number of display devices is stored in the data storing memory 130 which is available for the

display devices 101-1 to 101-n connected through control processing circuit 131 to acquire.) ,

wherein the detection means determines the location of the present image display device in the multidisplay system on the basis of the chain connection information and the total number of image display devices (Figure 1, item 129 and Figures 5 and 6 and column 8, line 47 to column 9, line 32. The examiner interprets since identification numbers are given to the display devices based on their locations in the multidisplay system that the location of a present image display device is determined based on the total number of displays and chain information received from the adjacent display devices.).

Regarding claim 7, Furuhashi et al. and Ogino et al. disclose an image display device according to claim 6.

Furuhashi et al. also disclose an image display device further comprising direction detection means for detecting whether image display devices connected at downstream locations are arranged in the vertical or horizontal direction (Figure 1, item 129 and Figures 5 and 6 and column 8, line 47 to column 9, line 32. The examiner interprets that since identification numbers are given based on the display devices' locations, that means are provided to determine if the device is connected in the horizontal or vertical direction.),

wherein the chain connection information includes information indicating the total number of image display devices chain-connected in the vertical direction and

information indicating the total number of image display devices chain-connected in the horizontal direction (Figure 1 and column 5, line 58 to column 6, line 3. The examiner interprets that since the ID number is set based on the horizontal or vertical direction, that information must be passed between the display devices so that the ID number can be set based on the horizontal and vertical directions.).

Regarding claim 8, Furuhashi et al. and Ogino et al. disclose a multidisplay system including a plurality of image display devices according to claim 1.

Furuhashi et al. also disclose wherein the plurality of image display devices are connected to each other and a host computer is connected to an image display device at a most upstream location (Figure 1 and column 5, line 58 to column 6, line 3. The examiner interprets that the external system could be a host computer.).

Regarding claim 9, this claim is rejected under the same rationale as claim 1.

Regarding claim 11, this claim is rejected under the same rationale as claim 3.

Regarding claim 12, this claim is rejected under the same rationale as claim 4.

Regarding claim 13, this claim is rejected under the same rationale as claim 5.

Regarding claim 14, this claim is rejected under the same rationale as claim 6.

Regarding claim 15, this claim is rejected under the same rationale as claim 7.

5. Claims 2, 10 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furuhashi et al. (US 6,583,771) in view of Ogino et al. (US 6,593,902) and further in view of Shirasaki et al. (US 6,943,753).

Regarding claims 2 and 17, Furuhashi et al. and Ogino et al. disclose an image display device according to claims 1 and 16.

Furuhashi et al. also disclose wherein a storage means stores the resolution information generated by the generation means by rewriting a corresponding item of the information in the memory (Figure 1, items 110 and 111 and column 6, lines 30-42. The examiner interprets that since the positions can be controlled by changing the write positions, that this changes the resolution and this information is stored in the memory.).

Ogino et al. also discloses communication processing means for performing communication with an external device (Column 5, lines 26-36 explain that each display 101 performs communications with other displays using the signal transmitting sections 105.);

wherein the acquisition means acquires resolution information using the communication processing means (As explained in the rejection of claim 1, since each display can acquire resolution information from other displays, and the devices

Art Unit: 2629

communicate using the processing means 105, then the resolution information would be acquired using the communications means.); and

where the first storage means stores the resolution information generated by the generation means by rewriting a corresponding item in the memory (As explained above, since the memory 104 stores the address information which is based on the resolution of the screen, when displays are disconnected and the size is detected again, this address information, i.e. resolution information, would be rewritten.).

Furuhashi et al. and Ogino et al. fail to teach that the display device further comprises:

communication processing means for performing DDC communication with an external device; and

a memory for storing EDID.

Shirasaki et al. also disclose a display device further comprising

communication processing means for performing DDC (Display Data Channel) communication with an external device (Figure 1, item 55); and

a memory for storing EDID (Extended Display Identification Data) information transformed in the DDC communication (Figure 1, item 54).

Therefore it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to replace the communications means used by the combination Furuhashi et al. and Ogino et al. with the DDC communications means taught by Shirasaki et al. in order to allow for a communication processing device which

Art Unit: 2629

can achieve automatic environment settings, i.e. plug and play, between the display monitors.

Regarding claim 10, this claim is rejected under the same rationale as claim 2.

Regarding claim 18, this claim is rejected under the same rationale as claim 2.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Cok (US 2004/0008155) discloses of a tiled display in which display devices can communicate with one another.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen G. Sherman whose telephone number is (571) 272-2941. The examiner can normally be reached on M-F, 8:00 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

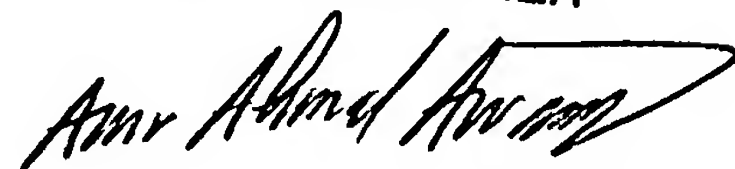
Art Unit: 2629

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SS

27 April 2006

AMR A. AWAD
PRIMARY EXAMINER

A handwritten signature in black ink, appearing to read "Amr A. Awad", written in a cursive style.